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QUARTERLY PROGRESS REPORT

4th Quarter 1949
(October, November, December)

FOREST UTILIZATION SERVICE
CENTRAL STATES FOREST EXPERIMENT STATION
COLUMBUS, OHIO

H. L. MITCHELL, DIRECTOR

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TIMBER HARVESTING AND SAWMILLING

Logging and sawmilling demonstration. The second logging show sponsored by FUS in cooperation with the State Extension Service was held at Wooster, Ohio, on the grounds of the Ohio Agricultural Experiment Station, October 25 and 26. Approximately 3,000 persons attended the first day and about 2,000 were there the second day. It was a very successful event, both from the exhibitors' and public viewpoint. Over forty exhibitors displayed their equipment in actual operation. Sawmill operators and farm woodland owners were especially pleased to see the variety of equipment suitable for the small operator and woodlot owner. Economical attachments for standard farm power equipment to enable farmers to do more of their own logging were featured. Several new, inexpensive, and very practical loading devices were shown for the first time in the Central States. Among these were the Lathers Cradle Boom Handi-Hoist, the Dalton self-loading dump truck, several interesting additions to the line of allied equipment for the four-wheel drive Jeep, and a few novel, self-loading 1½-ton stake trucks. The latest models in the medium and light weight crawler tractors were demonstrated as were several new developments in adapting wheeled tractors for the task of light farmwoods logging.

At a meeting of the Ohio Subsection of the Society of American Foresters, held in connection with this show, two very interesting panel discussions were held. The first of these was on the possibilities in the field of inexpensive logging equipment designed for the small sawmill operator and farm woodland owner. Special attention was directed to attachments for standard farm implements, such as the wheeled tractor, jeep, and standard 1½-ton farm truck. The second panel was on the development and potentialities in the field of portable chippers. Eugene Fobes of the FPL and Willard Bromley, Forest Engineer of the American Pulpwood Association were on both panels. Fobes acted as moderator of the first panel and R. K. Winters, Chief of the Division of Forest Economics of this Station led the discussions on portable chippers. Both panels were well represented by leaders in their respective fields, including George Carr of Pacific Car and Foundry, Don Ellis of Willys "Jeep", R. R. Alexander and R. C. Anchuss, representing two manufacturers of portable chippers.

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At the request of several representatives of the larger equipment manufacturers, a brief meeting was held following the Wooster show to discuss formation of a coordinating committee between these companies and FUS to schedule major demonstrations of this nature. The conflict this year between the Wooster and Raleigh, North Carolina shows prompted this request. It was decided that Day would contact the other FUS units in this matter. It was also suggested that the FPL act as a clearing house for scheduling shows in which FUS takes any major rule and that Eugene Fobes of the FPL act as chairman of this committee, if formed.

Ohio Hardwood Producers Association. Another movement, stemming largely from the Wooster show, is a meeting to be held in Columbus, January 14, to organize the sawmill operators of Ohio into an association similar in scope and objectives to the Indiana Hardwood Manufacturers Association.

Wyssen Cable System. The published information on this system has caught the attention of a number of larger operators in the more mountainous sections of the Central States. We feel very definitely that it has a place in both the Cumberland Plateau and the Ozarks and possibly elsewhere in the region. FUS has asked the FPL for the loan of the film showing this system in operation in Switzerland and is scheduling it for the Appalachian Hardwood Association meeting January 26. FUS may show it also at the meeting of the Appalachian Technical Committee of the APA at Cleveland on January 25. It will probably be shown before smaller groups of operators and foresters in Ohio and Indiana before those dates.

SEASONING

Seasoning improves at remanufacturing plants. Observations of yards and kiln-dried lumber at many furniture plants, and a few other types of woodworking factories, visited in connection with organization of the Owensboro (Ky.) Gluing Clinic are believed to provide a typical cross section of the general improvement that has been taking place throughout the CS area in the seasoning of lumber going into production. When FUS was started in the Central States area in 1946, troubles caused by improper seasoning were rampant. Well air-dried hardwoods were still hard to get from the mills and much green lumber was going into antique kilns which were unfit to dry such stock down uniformly to the 6 or 7 percent moisture content desired in anything like a reasonable amount of time. As of the last quarter of 1949 there has been a lot of remodeling of old kilns, installation of new kilns, improvement in air-yard practices at remanufacturing plants and acquisition of better technical knowledge of wood-moisture relations on the part of kiln operators and supervisory personnel. A few have leaned over backwards in their efforts to prevent any boards from entering the production line with too high a moisture content, thereby encountering trouble from getting some stock too dry. Advice and information on seasoning, dry kilns, and moisture control are still called for in good measure by CS wood-using industries from both the FPL and FUS. But more of the information is now in the "advance" category than formerly--provided in advance to keep trouble from developing, rather than answers to post-mortem requests for diagnoses of difficulties already encountered. It would appear that the combined efforts of the Laboratory and the FUS to spread a better knowledge of wood seasoning among the personnel of wood-products manufacturers in the CS area are bearing some fruit.

Lennox Furnace Company makes lumber dry kilns. It has been announced in a previous quarterly report that the Lennox Furnace Company of Marshalltown, Iowa was considering entry into the field of dry kiln manufacture. Making a first start about two years ago by rigging up some hot-air drying rooms in nearby wood-products factories without, apparently, any basic knowledge of lumber-drying fundamentals, the company has now developed equipment designed specifically for lumber. The development is a result of FUS inspection of an original installation and contacts with the company, later consultations with Laboratory specialists, and the training of their Assistant Chief Design Engineer at the 2-weeks Kiln Drying demonstration conducted at Madison in the spring of 1949. Full credit is given to the Laboratory by Frank Osborn, the engineer responsible for developing the kilns, in an article headed "Lumber Drying with Lennox" in the December, 1949 issue of "The Lennox News", published primarily for salesmen and dealers. For the information of other FUS units, parts of the article are here quoted: "Early this summer the writer spent two weeks at the U. S. Forest Products Laboratory in Madison, Wisconsin, studying the problems involved in the operation and design of lumber drying kilns....Following this visit to Madison, the Engineering Department in Marshalltown has worked up an excellent design for a lumber dry kiln. This design incorporates all the features recommended by the U. S. Forest Products Laboratory and in most cases is simpler and less expensive to build than a steam heated dry kiln of comparable performance.... This new design is most adaptable for the customer who needs a capacity anywhere between 5,000 and 20,000 board feet....In operation it is a simple, compartment type, end piled kiln and it takes ordinary loads of lumber 16 feet long by 8 feet wide by 8 feet high piled on stickers in the normal way and with no flues required in the load....The use of warm air as a means of heating in this dry kiln eliminates the expensive and complicated steam equipment and the service required to keep it operating properly....We obtain (this) reversible circulation by means of a series of dampers easily operated from outside the dry kiln. By using these dampers we do not have to reverse our fans and in this manner we eliminate the need for expensive reversing motor starters....We have designed our system for average velocities through the load of 300 feet per minute with reserve fan capacity for higher velocities if they are needed....Our plan for now is to handle all the lumber dry kiln jobs regardless of where they are located, directly from the Marshalltown engineering office. As further experience develops...we will very likely set up other divisional offices for handling dry kiln work."

Other parts not quoted state that the design provides for automatic humidification as needed. FUS will try to obtain information on performance of the new kilns as soon as possible. Any FUS units desiring more details should write to Frank Osborn, Lennox Furnace Company, Marshalltown, Iowa.

Moisture control. Efforts by FUS to arrange with the Keller Mfg. Company in Indiana for a long-term cooperative test of moisture-content control, using procedures and statistical checks recommended by the Forest Products Laboratory, have been suspended because shortage of funds will not permit the necessary field participating by the Laboratory at this time. A sample run of moisture-content tests with an electrical moisture meter were made by the company man in charge of seasoning and production following personal contacts by FUS. Entries of 51 MC samplings a day, taken at random from

kiln-trucks of oak (mostly) and some beech going into production after 8 to 28 days of shed storage following removal from kilns, were made on Laboratory forms and sent to Madison for statistical analysis. The data were for 12 days during the period October 17 to November 4, 1949. The results are noted in this report because they are believed to be an outstanding example of good drying for furniture production. Nearly 93 percent of the 612 sample boards fell within the narrow range of 5.4 to 6.1 percent MC. The average MC for the 12 days sampling was 5.85 percent with adherence limits computed at 6.04 and 5.66. Only one day's samples, which averaged 6.27 percent, exceeded this computed upper limit.

GLUING

Owensboro gluing clinic. Although the gluing clinic at Owensboro, Kentucky was intended primarily to serve furniture producers within a radius of about 30 miles, some last-minute contacts brought in representatives of companies far too distant to commute daily between home factories and clinic sessions. These contacts were made when some local concerns sent late word that participation would be impossible, or the number of participants previously announced would be cut down, thereby reducing appreciably the enrollment of 30 upon which the sponsor was counting. An air mail letter to RCA at Indianapolis brought a representative from their plant at Pulaski, Virginia. Another enrollee came from northern Ohio, 400 miles distant, and two came from the Singer Manufacturing Company at South Bend, about 330 miles from Owensboro. The final total enrollment at the clinic on October 11, 12, and 13 was 32 men. The Laboratory staff consisted of gluing specialists Brouse, Blomquist and Olson. The FUS member of the staff made an estimate based on information picked up during preliminary visits at participating factories which would indicate how much lumber was processed and what total value of glued-up products was fabricated under the supervision of those attending the gluing clinic. It was estimated that the 21 companies represented by the 32 men at the clinic convert about 52 million board feet of lumber and 182 million square feet of veneers into more than 50 million dollars' worth (factory wholesale prices) of furniture and other glued wood products per annum. It is evident that one of these gluing clinics, even though the assembled group consuming the technical bill-of-fare appears small, really has potentialities for conserving a large volume of wood at fabricating plants and enhancing the utility of finished products for many thousands of consumers.

DERIVED PRODUCTS

Wood-molasses feeding tests. The Ohio Agricultural Experiment Station has five or six different silage mixtures in 2400-pound experimental silos which they will use for comparative palatability tests in feeding dairy cows, starting probably in February. The silos were charged in October. Included are mixtures containing wood-sugar molasses and blackstrap molasses.

UTILIZATION

Hickory utilization study by FPL. Accepting the offer of the Ritter Lumber Company to supply shagbark (Carya ovata) veneer and sawlogs and big shellbark

(C. laciniosa) sawlogs for the hickory study, B. E. Mansberger of the Cumberland National Forest and Brundage went to the company operations in southeastern Kentucky to select the trees and get the logs started on their way to Madison. The well known confusion in common names of species again played its familiar role when it was found that there was no shellbark hickory at all in their operating territory and not much shagbark of the type wanted. Company men call shagbark hickory "scaly bark" and they thought shellbark was the hickory they know as "tight-bark". Most of their hickory species are those having tight bark such as pignut and mockernut. After a good deal of scouting on precipitous slopes, some good specimens of C. ovata were found which filled the bill for shagbark veneer and sawlogs. These reached the laboratory on December 1. Shellbark (C. laciniosa) is not yet included in the project. In places where C. laciniosa is known to be fairly common, no offers were received to supply study logs free of charge.

Muskingum Watershed Conservancy District. Further assistance was given to this quasi-public agency in developing their marketing and utilization problems. Day appeared before their Board of Governors on two occasions during the quarter to discuss the feasibility of their program which involves a broad plan for the management of some 25,000 acres of cut-over forest land and plantations owned by the District, and for an integrated program of utilization of the products therefrom.

MISCELLANEOUS

Cooperage Convention. Director Mitchell addressed the 34th semi-annual convention of the Associated Cooperage Industries of America, Inc., at Louisville, Ky., in November. He talked on forestry, timber-harvesting and utilization research and present and future supplies of timber for cooperage.

Survey of wood requirements. Both members of the FUS unit devoted several days during the quarter to cooperative help on the Forest Service survey of wood used by industry druing the calendar year 1948.

Metal detector. The Station's supply of the mimeographed report on use of the SCR-625 Army mine detector for finding hidden metal in timber, prepared in November 1947 was exhausted last quarter. A revised issue was prepared by Brundage during the fourth quarter and copies sent to Stations, Regions, and others. A start was made toward revising the list of dealers handling surplus SCR-625 detectors.

Distribution of this progress report

Chief, FS (2); FPL, Madison (8); 10 Forest Experiment Stations (1 ea.); Forest Supervisors (1 ea., Cumberland, Clark, Mark Twain, Shawnee, Hoosier-Wayne); R-9, Milwaukee (3); R-7, Philadelphia (2); 4 CS Branch Stations (1 ea.); 3 CS Experimental Forests (1 ea.).